

From the  
INTERNATIONAL SEARCHING AUTHORITY

To:

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PCT

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY  
(PCT Rule 43bis.1)

Date of mailing  
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference  
see form PCT/ISA/220

**FOR FURTHER ACTION**  
See paragraph 2 below

International application No.  
PCT/US2004/035143

International filing date (day/month/year)  
22.10.2004

Priority date (day/month/year)  
24.10.2003

International Patent Classification (IPC) or both national classification and IPC  
H01S3/00

Applicant  
BLACKLIGHT POWER, INC.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☒ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☐ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

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**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**International application No.  
PCT/US2004/035143**Box No. I Basis of the opinion**

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
  - ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material:
    - ☐ a sequence listing
    - ☐ table(s) related to the sequence listing
  - b. format of material:
    - ☐ in written format
    - ☐ in computer readable form
  - c. time of filing/furnishing:
    - ☐ contained in the international application as filed.
    - ☐ filed together with the international application in computer readable form.
    - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

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**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**International application No.  
PCT/US2004/035143**Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability**

The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non obvious), or to be industrially applicable have not been examined in respect of:

- ☒ the entire international application,  
☐ claims Nos.

because:

- ☐ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (*specify*):
- ☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. are so unclear that no meaningful opinion could be formed (*specify*):
- ☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.
- ☒ no international search report has been established for the whole application or for said claims Nos.
- ☐ the nucleotide and/or amino acid sequence listing does not comply with the standard provided for in Annex C of the Administrative Instructions in that:
- |                            |  |
|----------------------------|--|
| the written form           | <input type="checkbox"/> has not been furnished            |
|                            | <input type="checkbox"/> does not comply with the standard |
| the computer readable form | <input type="checkbox"/> has not been furnished            |
|                            | <input type="checkbox"/> does not comply with the standard |
- ☐ the tables related to the nucleotide and/or amino acid sequence listing, if in computer readable form only, do not comply with the technical requirements provided for in Annex C-*bis* of the Administrative Instructions.
- ☒ See separate sheet for further details

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**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING  
AUTHORITY (SEPARATE SHEET)**

International application No.

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1. The present application relates to the generation of novel hydrogen species, referred to as hydrinos and dihydrinos, and compositions of matter comprising new forms of hydrogen, and further to an inverted population of states of hydrinos, and a laser using this inverted population for stimulated emission.
- In particular, the claims relate to lasers (independent claims 1, 25, 65, 104, 138, 141), light sources (independent claims 66, 145, 148), compounds (independent claims 68, 69, 70, 73), catalysts (independent claims 74, 75, 80, 81, 82, 83, 84, 86, 87, 88, 102, 103), cells (independent claims 76, 77, 100), catalytic reactions (independent claims 89, 90, 97, 98), a mixture of catalysts (independent claim 101), use of lasers (independent claim 142), electricity (independent claims 143, 146) and the use of electricity (independent claims 144, 147).

The wording of the claims renders it difficult, if not impossible, to determine the subject-matter for which protection is sought. In particular, the present application fails to comply with the requirements of clarity of **Article 6 PCT** for the following reasons:

- i) Claims 1, 3, 5, 6, 9, 17, 21, 22, 24, 25, 27, 30, 31, 39, 41, 45, 46, 48, 51, 53, 54, 56, 57, 58, 65, 66, 67, 68, 69, 70, 71, 72, 73, 86, 87, 88, 89, 97, 98, 104, 110, 138, 145 and 148 contain terms which have **no well-recognised meaning in the art** and render the definition of the subject-matter of said claims unclear. Even though not listed here, the same problem arises for all claims dependent on the aforementioned.
- ii) The following claims attempt to define the subject-matter in terms of the **result to be achieved**, without providing the technical features necessary for achieving this result:  
Claims 1, 3, 15, 16, 17, 24, 25, 27, 30, 31, 42, 45, 49, 54, 56, 57, 58, 65, 66, 67, 68, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 82, 86, 87, 88, 89, 90, 91, 94, 97, 98, 99, 101, 102, 103, 104, 105, 110, 138, 141, 145 and 148.

Moreover, neither the additional dependent claims nor the description contain any subject-matter which, in combination with the subject-matter of any claim to which they refer, would overcome the above objections. Consequently, the application does not contain any subject-matter which would disclose the invention in a manner sufficiently clear and complete to be carried out by a person skilled in the art, contrary to the requirements of **Article 5 PCT**.

In particular, in the description in sections I.2.1 and I.2.2, hydrinos and dihydrinos,

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International application No.

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i.e. novel hydrogen species, are theoretically described in terms of binding energies. Mathematical relationships for the binding energies are presented. In sections II.1 to II.6 a number of catalysts are theoretically described to generate novel hydrogen species in catalytic reactions.

However, the reactors and the reaction conditions presented in sections II.7 to II.9 and in sections IV.1 to IV.5 of the description are merely broadly defined and apparently ordinary (cf. page 61, lines 23-25 of the description). No specific features describing the apparatus are given. No concrete example is given for the production of novel hydrogen species.

It is therefore not evident to the skilled person what technical features of a reactor make the generation of novel hydrogen species possible.

A similar argumentation applies for the features of the lasers presented in sections I.2.4, II.10 and IV.6 of the description. The technical features presented do not enable the skilled person to carry out the invention.

Therefore, the present application fails to comply with the requirements of sufficient disclosure of **Article 5 PCT**.

The said **lack of clarity** of the claims in combination with the said **lack of sufficient disclosure** is to such an extent that a **meaningful search is not possible**. Consequently, no search report can be established for the present application.

2. Additionally, it should be noted, that the present application fails to comply with the requirements of clarity and conciseness of **Article 6 PCT** (see also **Rule 6.1(a) PCT**) for the following reasons:

- i) The following claims contain references to features in claims on which they depend but which do not contain these features, namely claims 9, 12, 45, 46, 47, 48, 52, 60, 63, 68, 69, 70, 73, 74, 75, 78, 84, 90, 100, 101, 102, 103, 108, 109, 111, 125, 141, 143. This inconsistency between the claims leads to serious doubts concerning the matter for which protection is sought.
- ii) The independent claims 143, 144, 146 and 147 do not contain any clear features which limit the scope of said claims. The process of generating electricity does not confer any clear technical features to the product, i.e. electricity, which would distinguish the product from the same product generated by another means.

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iii) The group of independent claims 1, 25, 65, 104, 138 and 141 relates to lasers, the group of independent claims 66, 145 and 148 relates to light sources, the group of independent claims 68, 69, 70 and 73 relates to compounds, the group of independent claims 74, 75, 80, 81, 82, 83, 84, 86, 87, 88, 102 and 103 relates to catalysts, the group of independent claims 76, 77 and 100 relates to cells, the group of independent claims 89, 90, 97 and 98 relates to catalytic reactions, the group of independent claims 143 and 146 relates to electricity and the group of independent claims 144 and 147 relates to the use of electricity. Although the claims within these groups of independent claims have been drafted as separate independent claims respectively, they appear to relate effectively to the same subject-matter and to differ from each other only with regard to the definition of the subject-matter for which protection is sought or in respect of the terminology used for the features of that subject-matter. The aforementioned claims therefore lack conciseness.

3. The applicant's attention is drawn to the fact that claims relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (**Rule 66.1(e) PCT**). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally **not to carry out a preliminary examination on matter which has not been searched**. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure. If the application proceeds into the regional phase before the EPO, the applicant is reminded that a search may be carried out during examination before the EPO (see EPO Guidelines C-VI, 8.5), should the problems which led to the **Article 17(2) PCT** declaration be overcome.